REMARKS

Status Summary

Claims 1, 2, and 4-6 are pending in the present application, each of which presently stands rejected. Claim 1 is amended by the present amendment. No new matter has been introduced by the present amendment. Reconsideration of the application as amended and based on the remarks set forth hereinbelow is respectfully requested.

Claim Rejection - 35 U.S.C. § 103

Claims 1, 2, 4, and 5 stands rejected by the Examiner under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Pub. No. 2003/0128751 to Vandenameele-Lepla, hereinafter referred to as "Lepla", in view of U.S. Patent No. 6,674,820 to Hui et al., hereinafter referred to as "Hui", U.S. Patent No. 5,175,558 to DuPree, hereinafter referred to as "DuPree", and the admitted prior art. In addition, claim 6 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Lepla in view of Hui, Dupree, and the admitted prior art, and further in view of U.S. Patent No. 6,122,703 to Nasserbakht, hereinafter referred to as "Nasserbakht". The positions of the Examiner as summarized above with respect to claims 1, 2, and 4-6 are respectfully traversed as described below.

With regard to claim 1, the Examiner contends that Lepla discloses a weighting circuit for a receiver that is provided for receiving a multi-carrier signal, wherein the weighting circuit weights the carrier signals such that the spurious signal

energy is of equal magnitude for all weighted carrier signals. The Examiner acknowledges that Lepla fails to disclose several features of the present invention, including "an estimation unit calculating said expected spurious signal energy using cross correlation between the received signal and a spurious signal to be expected which has been phase-shifted through 90°", but the Examiner further contends that the admitted prior art discloses this feature. It is respectfully submitted, however, that the disclosure at page 3, lines 8-9, of the present specification does not describe the same estimation unit recited in the present claims.

In particular, in the portion of the current specification that is cited by the Examiner as the admitted prior art, it is disclosed that the estimation unit calculates the cumulative spurious signal, and the estimated cumulative spurious signal is deducted from the input signal E by the subtraction unit SUB, so that ideally just an undisturbed useful signal S remains and is processed further. In addition, referring to page 3, lines 5 through 12, of the present application, it is disclosed that to subtract the estimated signal with the correct phase, the estimation unit ascertains a first cross correlation value between the received signal and a stored spurious signal which is to be expected and also a second cross correlation value between the received signal and the spurious signal to be expected which has been phase-shifted through 90 degrees. The estimation unit then calculates the phase of the spurious signal on the basis of the cross correlation values. The calculation of this phase is severely susceptible to error.

In contrast with this disclosure, the currently claimed estimation unit performs only a first cross-correlation between the received signal and at least one spurious signal which is to be expected, and a second cross correlation between the received signal and a spurious signal to be expected, which has been phase-shifted through 90 degrees. This calculation does not need to be followed by a subtraction to determine the expected spurious signal energy.

In this regard, claim 1 has been amended as indicated above to more particularly recite that the estimation unit is "calculating said expected spurious signal energy using a first cross-correlation between the received signal and at least one spurious signal to be expected, and a second cross correlation between the received signal and a spurious signal to be expected, which has been phase-shifted through 90 degrees". Support for this amendment can be found in the specification as originally filed, for example at page 9, lines 23-33, where it is discussed that "[t]he estimation unit 25 performs first cross correlation between the received signal which is present at the output of the ADC 4 and with at least one spurious signal which is to be expected, in order to calculate a first cross correlation value k_1, and second cross correlation between the received signal and a spurious signal to be expected which has been phase-shifted through 90°, in order to calculate a second cross correlation value k_2. On the basis of the two cross correlation values k_1, k_2, the energy of the current disturbance in the received signal is calculated by the estimation unit, $E_{spurious} \sim k_1^2 + k_2^2$". It is respectfully submitted that the admitted prior art does not identically disclose this feature.

In addition, it is further respectfully submitted that none of the other cited references disclose the features of the presently-claimed subject matter directed to the estimation unit, particularly that the estimation unit is "calculating said expected spurious signal energy using a first cross-correlation between the received signal and at least one spurious signal which is to be expected, and a second cross correlation between the received signal and a spurious signal to be expected, which has been phase-shifted through 90 degrees".

Further, regarding the feature of the memory being programmable via an interface connected to said memory though a plurality of internal data lines, the Examiner contends that Lepla discloses a noise power spectrum measured off-chip and values for the carrier dependent weights programmed into a weight source **310**, and DuPree discloses a weight memory **66** connected to a sequential update **54**, internal to system **24**. It is respectfully submitted, however, that the memory of the present claims can be programmed externally via an interface circuit. The interface circuit can be connected to the programmable memory via internal data lines. The programmable memory can contain a plurality of weighting coefficient sets, each weighting coefficient set containing a multiplicity of weighting coefficients, with the number of weighting coefficients (e.g., 8 different weighting coefficient sets) corresponding to less than or equal to the number of sub-bands within the transmission frequency band. The programmable memory can be connected to a selector via address lines, and the selector can select a particular weighting coefficient set from a plurality of different weighting coefficient sets stored within the

memory. To this end, the selector can generate an address for selecting the appropriate weighting coefficient set. It is respectfully submitted that both Lepla and DuPree are silent regarding these characteristics of the memory of the present claims.

As a result, for at least the reasons stated above, it is respectfully submitted that Lepla, taken either alone or in combination with one ore more of Hui, Nasserbakht, DuPree, or the admitted prior art, fails to teach or suggest every element of the weighting circuit of independent claim 1, which includes "an estimation unit" and "a memory" as described above. Accordingly, it is respectfully requested that the rejection of claim 1 under 35 U.S.C. § 103(a) be withdrawn and the claim allowed at this time. In addition, claims 2 and 4-6 depend upon claim 1. Accordingly, it is respectfully submitted that the above remarks apply equally to these claims, and therefore the rejections of claims 2 and 4-6 should likewise be withdrawn and the claims allowed at this time.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

If any small matter should remain outstanding after the Patent Examiner has had an opportunity to review the above Remarks, the Patent Examiner is respectfully requested to telephone the undersigned patent attorney in order to resolve these matters and avoid the issuance of another Official Action.

DEPOSIT ACCOUNT

The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. 50-0426.

Respectfully submitted,

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